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Part of MS19 New Developments in the Modeling, Analysis and Simulation of Oceanic Flows - Part III of IV

Lagrangian Tools and the Assessment of the Predictive Capacity of Geophysical Data Sets

Abstract. We examine, with recently developed Lagrangian tools, altimeter data and numerical simulations obtained from the HYCOM model in the Gulf of Mexico. Our data correspond to the months just after the Deepwater Horizon oil spill in the year 2010. Our Lagrangian analysis provides a skeleton that allows the interpretation of transport routes over the ocean surface. The transport routes are further verified by the simultaneous study of the evolution of several drifters launched during those months in the Gulf of Mexico. We find that there exist Lagrangian structures that justify the dynamics of the drifters, although the agreement depends on the quality of the data. We discuss the impact of the Lagrangian tools on the assessment of the predictive capacity of these data sets.

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